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The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston

Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire.

Mirabeau B. Lamar

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FOREWORD

This is the fourth school study which has been undertaken by the Bureau of School Inquiry of the Division of Extension. Other studies made in coöperation with members of the staff of the School of Education are: *A Survey of the Galveston Public Schools, A Survey of the Schools of the Goose Creek Independent School District,* and *A Preliminary Study of the Laredo Public Schools.*

The present study is limited to a consideration of the building needs of the senior high schools of San Antonio. A feature of the study to which much attention was given was an effort to determine potential high-school enrollment by determining the number of children of ages 15, 16, and 17 in each elementary school district in the city. This not only gave the potential demands, in a general way, but it indicated geographical distribution, which is an important factor in locating new high-school buildings.

INTRODUCTION

At the invitation of Superintendent Marshall Johnston and the San Antonio Board of Education in the early spring of 1928, this study was undertaken by the Bureau of School Inquiry of the Division of Extension, the University of Texas.

The chief problem faced by the staff was to determine the adequacy and efficiency of the present senior high school facilities on the basis of:

1. Present enrollment in these schools.
2. Potential demands, which may become actual, on account of growth in population and by attracting larger numbers to the high schools.
3. An evaluation of present buildings.
4. Through a study of population trends, to reach some general notion of the proper location of new buildings.

The work was undertaken by Dr. J. O. Marberry, Director of Extension Teaching and Professor of Education in the University of Texas, and the writer, with the coöperation of the general administrative officers of the San Antonio schools, and the high-school principals and teachers. The surveyors are especially indebted to Superintendent Johnston, Assistant Superintendent Knox, Secretary Sholz, and Principals Eakeley and Gotke for unfailing efforts to secure necessary data.

The survey data were secured in part from first-hand study and observation and in part from official information furnished by school officers and school reports on file in the office of City Superintendent Johnston and the State Department of Education.

The Brackenridge and Main Avenue plants were evaluated by the use of the standard score card, constructed by Dr. Strayer and Dr. Engelhardt and used generally over the country for evaluating school buildings.

The study, limited as it is, indicates that further study might profitably be pursued with respect to curriculum offering, child accounting, efficiency of instructional staff, a vocational program for San Antonio, etc. A well organized research department, with the aid of such outside agencies as may be secured, could undertake these and other studies at a minimum of cost and with great profit to the system. San Antonio, on account of its population of foreign birth and of foreign descent, offers a field for such activities second to no other city in the United States. The small percentage of total school maintenance cost that would be necessary to support such a department would be practically negligible.

T. H. SHELBY,
Dean of Extension.

I.—GROWTH IN SCHOLASTIC POPULATION AND IN SECONDARY SCHOOL ENROLLMENT

San Antonio shares with every other American city an annual increase in population in excess of the normal population growth throughout the country. This fact makes the problem of added school enrollments a perennial one. Table I gives the growth in school population for the ten-year period 1919–1920 to 1928–1929, inclusive.

TABLE I.—GROWTH IN SCHOLASTIC POPULATION IN SAN ANTONIO FOR TEN YEARS, 1919–1920 TO 1928–1929: AGES 7–17

(Data from School Census Report to the State Department of Education)

School Year	No. on Census	Increase Over Previous Year	Percentage Increase
1919–1920	31,477		
1920–1921	31,846	369	1.1
1921–1922	34,494	2,648	8.3
1922–1923	35,559	1,065	3.1
1923–1924	36,801	1,242	3.5
1924–1925	37,915	1,114	3.0
1925–1926	38,599	684	1.8
1926–1927	39,565	966	2.5
1927–1928	41,624	2,059	5.2
1928–1929	44,300	2,676	6.4

Increase for the ten-year period, 12,823.
Per cent of increase, 40.7.

The increase in school population is constant from year to year, though varying in amount of increase. It is noticeable that the increase of the last two years is far greater than the average for the ten years and exceeds that of any other year except one (1921–1922). The percentage of increase for the ten years is 40.7, more than one-fourth of which occurred during the last two years.

The total increase for the period is 12,823 children, representing a total population increase in the city of some 60,000 people. Such an increase calls for a program of building expansion running into millions of dollars, and if such growth represented a newly developed city, the people

would not hesitate to vote millions for securing educational facilities of the right sort.

Table II gives the enrollment in elementary schools and Table III gives the same data for junior and senior high schools. The number belonging, as of March, 1927, is given, together with the percentage of those enrolled and of those belonging which had Spanish names. These tables are indicative of the problem of secondary education in San Antonio on account of the Mexican and Spanish population.

TABLE II.—REPORT ON NUMBER OF CHILDREN HAVING SPANISH NAMES IN THE ELEMENTARY SCHOOLS OF SAN ANTONIO—MARCH, 1927

School No.	Total Enrollment	No. of Spanish Names	Per Cent	Belonging	No. of Spanish Names	Per Cent
1	350	338	96.5	340	328	96.4
2	369	363	64	504	333	66
3	267	131	45	228	122	53
4	578	223	37.3	411	166	40.3
5	378	256	67.7	328	226	68.9
6	347	13	3.7	269	9	3.3
7	618	599	97	581	569	97.5
8	1,311	1,311	96	1,162	1,122	96
9	926	738	79	879	703	79
10	597	197	33.3	536	175	32.6
11	1,015	659	65	906	605	65.6
12	331	70	21	309	61	20
13	574	65	11.3	481	56	11.6
14	409	160	31.1	395	157	39.8
15	509	210	41.5	402	171	42.2
16	356	42	11	339	38	11
17	310	127	40.9	285	118	41.4
18	352	56	15.1	330	54	16.4
19	666	450	67	595	418	70
20	591	19	5.4	339	18	5.3
21	1,383	1,355	98.5	1,271	1,249	98
22	570	46	8	558	46	8
23	337	30	9	320	26	8
24	618	276	44.6	514	242	47
25	203	203	100	178	178	100
26	583	37	6	563	33	6
27	976	283	30	786	270	34
28	360	8	2	294	8	2.1
29	107	16	15	106	16	15.1
30	598	153	25	513	147	28.6
31	303	107	35	212	91	42
32	1,112	1,112	100	959	959	100
33	379	313	82	338	276	82
34	142	14	10	136	8	6
	18,383	9,980	54.2	16,367	8,998	54.9

They show that 54.2 per cent of the pupils enrolled in the elementary schools have Spanish names, while 24.2 per cent of the children in the junior high schools have Spanish names, and 9.3 per cent in the senior high schools have Spanish names.

TABLE III.—REPORT ON NUMBER OF CHILDREN HAVING SPANISH NAMES IN THE HIGH SCHOOLS OF SAN ANTONIO—MARCH, 1927

School	Total Enrollment	No. of Spanish Names	Per Cent	Belonging	No. of Spanish Names	Per Cent
Main Avenue High	1,662	210	12	1,660	190	11
Brackenridge High	1,866	120	6.4	1,558	112	7.1
	3,528	330	9.3	3,218	302	9.3
Emerson Jr. High	632	86	13.7	627	84	13.3
Harris Jr. High	578	130	23.1	548	129	23.5
Howth. Jr. High	673	89	13	638	83	13
Irving Jr. High	725	290	40	700	280	40
Lanier Jr. High	602	533	88	571	503	86
Page Jr. High	883	133	15	832	101	12
Poe Jr. High	606	46	7	582	44	7
Twain Jr. High	868	44	5	876	46	5.2
	5,567	1,351	24.2	5,374	1,270	23.6

Logically, two deductions may be made. In the first place, San Antonio has a distinct advantage, financially, over a city like Houston or Dallas with a smaller foreign population, on account of the relatively small percentage of Spanish-speaking children who continue through junior and senior high schools. The State apportionment is on the basis of scholastic census. Free education extends through the high school and is paid for in part, at least, by State available funds. If children of Mexican descent attend high school in smaller numbers than do the non-Spanish speaking children in the city, the differential between the State support and total cost, which represents local support, is thereby reduced. San Antonio profits, seemingly, from this condition, in the cost of public education.

In the second place, children of foreign descent, many of them, at least, quite evidently need a different educational appeal and offering from children who come from native

homes. The advantage that San Antonio enjoys on account of her foreign population is offset by the necessity of providing a type of education of an industrial and vocational sort that is relatively more expensive than the sort given in an ordinary academic high school. That San Antonio has successfully met this problem, in part, is shown by the equipment and offering in industrial and vocational work at such junior high schools as the Sydney Lanier, where the children with Spanish names number 88 per cent of the total enrollment. It is also shown by the industrial and vocational courses in the senior high schools, especially in the Main Avenue High School.

That more of such effort will be required for most effective results is evident to a student of the situation. A thorough-going curriculum study, as suggested above, would reveal much of interest in the line of progress in the high schools, both with respect to what has been accomplished in San Antonio and what might be accomplished.

Table IV shows growth in enrollment in high-school grades (8, 9, 10, and 11) for the eight-year period 1920–1921 to 1927–1928, inclusive. The percentage of increase for the period is 30.4. A glance at Table I and a simple calculation, shows that for the same eight-year period the school population of the city increased 30.7 per cent. Thus the percentage of increase in total scholastic population is slightly greater than the increase in high-school enrollment

TABLE IV.—ENROLLMENT IN HIGH SCHOOLS IN SAN ANTONIO FOR EIGHT YEARS, 1920–1921 TO 1927–1928: GRADES 8–11

(Data from Office of Superintendent)

Year	Enrollment	Per Cent Increase Over 1920–1921
1920–1921	3,959	
1921–1922	4,266	7.7
1922–1923	4,448	12.0
1923–1924	4,104	3.6
1924–1925	4,789	20.0
1925–1926	4,644	17.0
1926–1927	4,827	22.0
1927–1928	5,161	30.4

for grades 8 to 11, inclusive. That this is not typical of the country as a whole is indicated by reference to Figure 1, below.

Data were not available for senior high-school enrollment in San Antonio (grades 9, 10, and 11) prior to 1923–1924. For the five-year period from 1923–1924 to 1927–1928, inclusive, the percentage of increase in these grades was 14, as shown by Table V. Thus for the last five years the senior high-school increase was a little less than half that of grades 8, 9, 10, and 11 for a period of eight years.

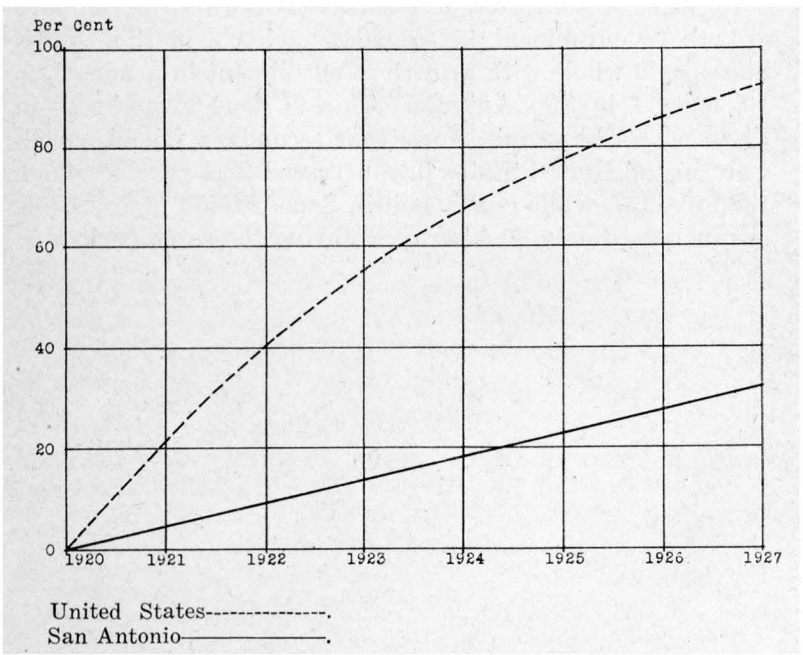


FIGURE 1.—Percentage increase in high-school enrollment in San Antonio (grades 8, 9, 10, 11) compared with the United States as a whole for the years 1920–1927.

(Data from Research Bulletin of N. E. A., Vol 5. No. 4, September, 1927, and from the office of Superintendent.)

Increase for San Antonio, 30.4 per cent.

Increase for the United States, 92.4 per cent.

TABLE V.—ENROLLMENT IN MAIN AVENUE AND BRACKENRIDGE SENIOR HIGH SCHOOLS FOR FIVE YEARS, 1923–1924 TO 1927–1928

(Data from Office of Superintendent)

School Year	Total Enrollment
1923–1924	3,021
1924–1925	3,259
1925–1926	3,176
1926–1927	3,304
1927–1928 (February 24, 1928)	3,452

Increase for five-year period, 431.
Per cent of increase, 14.3.

In view of this fact, it seems worth while to compare growth in enrollment in secondary schools in the United States as a whole with growth in enrollment in grades 8, 9, 10, and 11 in San Antonio. This is done graphically in Figure 1. The graph shows that secondary school enrollment in the United States has increased 92.4 per cent from 1920 to 1927, while enrollment in San Antonio high schools has increased only 30.4 per cent during the same period.

II.—IS SAN ANTONIO SERVING EFFECTIVELY ITS PUPILS OF HIGH-SCHOOL AGE?

Table VI gives the enrollment by ages, grades, and sexes for all pupils enrolled in grades 9, 10, and 11, that is the senior high schools (Brackenridge and Main Avenue), of San Antonio for 1927–1928, as reported to the State Department of Education by the City Superintendent of Schools.

TABLE VI.—ENROLLMENT BY AGES, GRADES, AND SEXES IN THE SAN ANTONIO SENIOR HIGH SCHOOLS FOR 1927–1928

		AGES										
Grade	Sex	12	13	14	15	16	17	18	19	20	21	Over 21	Total
9	Boys	3	40	186	266	177	75	8	4	..	..	..	759
	Girls	3	36	170	238	116	24	4	..	..	..	..	591
10	Boys	..	3	54	157	195	104	43	21	3	..	..	580
	Girls	1	2	58	189	261	80	9	..	..	..	..	600
11	Boys	..	..	..	25	150	151	84	45	9	1	1	466
	Girls	..	..	10	50	164	209	22	15	4	3	..	477
Totals,	Boys	3	43	240	448	522	330	135	70	12	1	1	1,805
	Girls	4	38	238	477	541	313	35	15	4	3	..	1,668
Grand Total		7	81	478	925	1,063	643	170	85	16	4	1	3,473

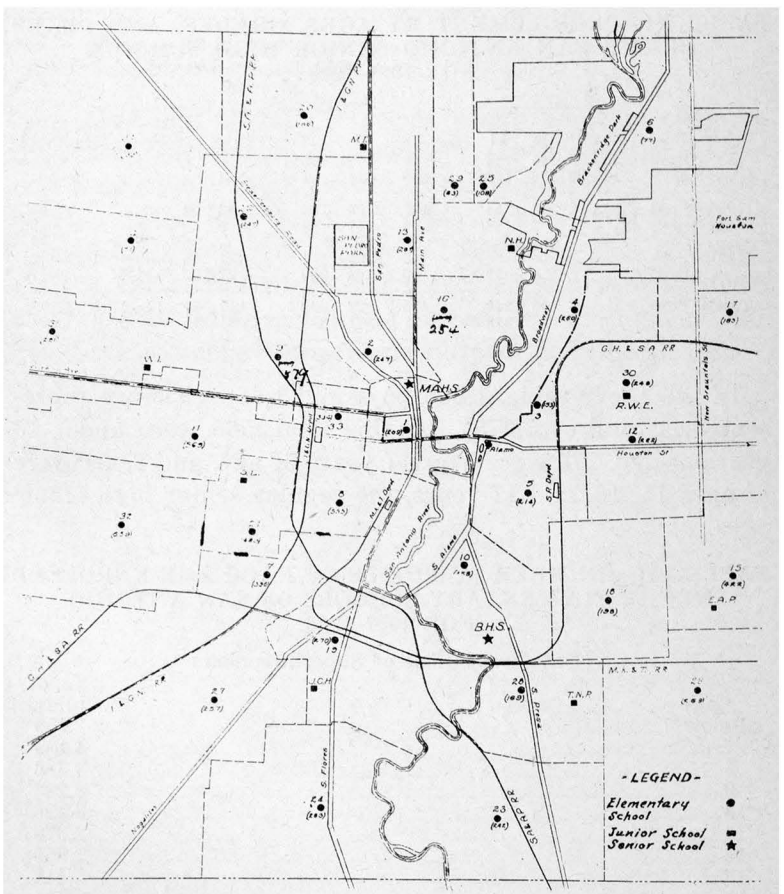
In the above table, 1,805 boys and 1,668 girls are represented, a total of 3,473. Of this total, 566 were under 15 years of age, 276 were over 17 years of age, and 2,631 were of ages 15, 16, and 17 years, the regular senior high-school ages.

TABLE VII.—NUMBER OF PUPILS OF EACH AGE ENROLLED IN THE ELEMENTARY SCHOOLS OF SAN ANTONIO FOR 1927–1928

(Data from Office of Superintendent)

Age	No. of Children
Below 7	959
7	4,189
8	3,386
9	3,223
10	3,226
11	2,979
12	2,856
13	3,442
14	1,324
15	616
16	192
17	44
Total	26,436

Table VII shows an enrollment of 852 of ages 15, 16, and 17 years in the elementary grades, and Table VIII gives 458 of these ages enrolled in the eighth grade. The total in Tables VII and VIII of these ages is 1,310 which, added to the enrollment above of 2,631 in Table I, gives a grand total of 3,941 of ages 15, 16, and 17 years enrolled in the public schools for 1927–1928.



MAP 1.—Number of children 15, 16, and 17 years of age in each Elementary School District in San Antonio. (Data from office of Superintendent, March 8, 1928.)

TABLE VIII.—ENROLLMENT BY AGES, GRADES, AND SEXES IN THE SAN ANTONIO JUNIOR HIGH SCHOOLS FOR 1927–1928

		AGES										
Grade	Sex	9	10	11	12	13	14	15	16	17	18	Over 18 Total
6	Boys	4	51	195	353	235	153	92	28	6	..	.. 1,117
	Girls	4	44	199	319	252	127	54	20	1	..	.. 1,020
7	Boys	..	3	50	201	317	196	98	42	13	..	.. 920
	Girls	..	2	47	205	354	203	85	29	5	1	.. 931
8	Boys	..	..	..	42	215	350	163	68	42	2	1 883
	Girls	..	..	9	59	241	305	131	45	9	2	.. 801
Totals,	Boys	4	54	245	596	767	699	353	130	61	2	1 2,920
	Girls	4	46	255	583	847	635	270	94	15	3	.. 2,752
Grand Total		8	100	500	1,179	1,614	1,334	623	232	76	5	1 5,672

The latest school census, taken in March, 1928, indicated a total of 9,589 children of ages, 15, 16, and 17 years in San Antonio. This total is shown by districts in Map 1.

Thus we find a potential enrollment of 9,589 children of ages 15, 16, and 17 years, with an enrollment in the public schools for 1927–1928 of 3,941. This is a percentage of enrollment of these ages of 41.1, leaving 5,648 children of ages 15, 16, and 17 years, or 58.9 per cent not enrolled in the San Antonio public schools.

The potential enrollment of grades 8, 9, 10, and 11 in San Antonio is approximately 12,600. This is determined as follows:

First.

1927–1928 enrollment, 15, 16, 17 years, grades 9, 10, 11=2,631
1927–1928 enrollment, all ages grades 9, 10, 11=3,473
1928 census, 15, 16, 17 years 9,589
Let X=total potential enrollment.
Then 2,631:3,473=9,589:X. X=12,637.

Second.

1927–1928 enrollment, 15, 16, 17 years, all grades=3,941
1927–1928 enrollment, all ages, grades 8, 9, 10, 11=5,161
1928 census, 15, 16, 17 years 9,589
Let X=total potential enrollment.
Then 3,941:5,161=9,589:X. X=12,557.

These calculations assume that actual enrollment of given ages, 15, 16, and 17 years, bears the same ratio to the potential enrollment of these ages as actual enrollment of all ages

bears to the potential enrollment of all ages, or approximately twelve thousand six hundred.

Of the potential enrollment (12,600), 3,473 are enrolled in the senior high schools, a percentage of 27.6, and 5,161 are enrolled in grades 8, 9, 10, 11, a percentage of 41. More than seventy-four hundred children in San Antonio of secondary school age are not enrolled in the public schools. Reports to the survey staff from private secondary schools show an enrollment of approximately thirteen hundred pupils. This leaves a total of approximately sixty-one hundred young people of secondary school age who are not enrolled, even for a limited amount of work, in either public or private high schools.

It is the function of a survey staff to deal with facts but it is our belief that if all pupil accounting were done with absolute accuracy, that is, if every individual in San Antonio of high-school age were known, that it would show approximately seventy-five hundred children in San Antonio at this time, October, 1928, who are of high-school age but who are not enrolled and not likely to be enrolled under the present program. This is significant and places a heavy responsibility on San Antonio school authorities. The opportunities for extending high-school advantages to pupils of high-school age offer a challenge to the intelligent citizens of San Antonio.

A study made by Counts in 1922 showed that in 1918 there were in the United States, 8,053,872 children of high-school age and an enrollment in the public high schools of the nation at that time of 1,645,171, a percentage of 20.4.[1]

Counts limited his study to four selected cities: Bridgeport, Conn., Mt. Vernon, N. Y., St. Louis, Mo., and Seattle, Wash. The number of children of high-school age in these cities in 1918 was 96,305 and the enrollment in public high schools was 20,305, or 21 per cent.

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[1]Counts, G. S., *The Selective Character of American Secondary Education*, p. 20. The University of Chicago Supplementary Educational Monographs, No. 19, May, 1922.

Latest reports from the Bureau of Education, as shown in Figure 1, above, indicate a percentage of increase of 92.4 in public high-school enrollment in the United States from 1920–1921 to 1927–1928, while San Antonio's increase in high-school enrollment is only 30.4 per cent.

The total enrollment in the public schools of San Antonio for 1927–1928 of ages 7–17 years was 34,340 (Tables VI, VII, and VIII). Of this total, 4,876 were enrolled in grades 8–11, inclusive; a percentage of 14.2.

A study made in 1926 of 206 public school systems of the United States in cities of 30,000 to 250,000 population showed the percentages that the average daily attendance in secondary schools were of the average daily attendance of day schools.[2]

Of the 206 cities in the study, 140 were of the centralized type and 66 of the coördinated type. The percentage of high-school attendance in the 140 cities was 17.5 and in the 66 cities, 16.6. San Antonio, a centralized school, had a percentage of 16.4, somewhat below the average of the 206 cities in the study. Eight other Texas cities averaged 17.9 per cent. This rather extended reference is made because the average daily attendance for a given year is a criterion of the way in which total enrollment functions and the percentage that this attendance in the high schools is of the attendance in all grades, elementary and high school combined, is a substantial criterion of the way in which the high-school enrollment functions. Sixty-five per cent of the 206 cities referred to above had percentages of attendance in the high schools ranging from 13 to 21.

Factors involved in making San Antonio's potential enrollment actual are many and varied. There is, first of all, the question of adequacy of the school plant. Data presented in this report (Chapter III) indicate that the present plants are inadequate both as to amount and quality of service, and especially is this true in Main Avenue. A second factor is

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[2]**Marberry, J. O.,** ***The Administration of Public Education in Centralized and Coördinated Schools,*** p. 62. University of Texas Bulletin No. 2810, March 8, 1928.

the general environment. Chapter III shows that Main Avenue is improperly located with respect to the business section of the city. Business activities of various kinds are in close proximity. Many of them are of the cheaper sort, constituting in some instances little more than holes in the wall. Business encroaches on the grounds which should constitute a portion of the school grounds. This is furthermore a very busy traffic center and lives of pupils are imperiled.

A third factor is location with respect to the population growth of the city and the number of pupils to be accommodated in the different sections. A glance at the map, page 16, will show conclusively that Main Avenue is not properly located. In fact, the line of division between the two high-school districts runs within a few blocks of the Main Avenue building and puts the high school practically in the corner of the territory served.

A further fact to be considered is that the location of a high school in a given vicinity tends to increase high-school attendance in that vicinity. This factor must be taken into account in determining a correct policy as to the number of high schools to be established. On the one hand, would be the advantage of a large cosmopolitan high school. On the other hand, would be the consideration of accessibility and the "pulling power" on students. This latter is, somewhat roughly, inversely proportional to distance.

The map shows not only the geographical location of the two high schools but their location with respect to high-school population. The map shows for each elementary school district, indicated by number and dot, the number of children 15, 16, and 17 years of age in that district. This number is in parentheses in each case. The dark dot and dash line, extending along Lake View Avenue and Houston Street, and then extending in an irregular course in a northeasterly direction to Fort Sam Houston, divides the two high-school districts. The figures in parentheses referred to above total, approximately, 3,152 for Main Avenue territory and 6,437 for Brackenridge territory. The surveyors

were advised that these lines were not strictly adhered to. Brackenridge, it would seem, is fairly well located with respect to the high-school population of the southern and southeastern sections of the city. There are, however, children of high-school age to the number of 2,113 in the northwestern portion of its present territory, counting those west of the International & Great Northern tracks, that are handicapped by distance, traffic on busy business streets, and railroad crossings. The same might also be said with respect to the children in the southwest territory of the Main Avenue district.

A casual survey of the growth of the city shows that it is building with great strides north, northwest, and west. It seems to the survey staff that two courses are open to the board. First, to build a high school which would accommodate at least 3,000 students north and west of the present site of the Main Avenue building, or, second, to build a smaller high school slightly west of north of the present site of Main Avenue and then build a second high school in the western section of the city. It is our belief that the three high schools would probably considerably increase high-school enrollment. Whether one or two, the building or buildings should be of the T, E, or H type and should be capable of enlargement without change in original design. (See *Standards for High School Buildings,* by Strayer and Engelhardt, page 15.)

Should the board decide to erect a high school in the western section, it is strongly recommended that emphasis be placed on vocational courses and that the building and equipment be adapted to this purpose.

With respect to the present Main Avenue plant, it is the judgment of the surveyors that one of two courses might be followed with profit to the school interests of the city. Should it be deemed advisable by those in authority to erect only one new high school as suggested as an alternative above, Main Avenue, with some remodeling, might be turned into a technical high school, with a part-time day program and an evening school program as conducted at present.

One of the buildings might also serve to house the Junior College. Should two new high schools be erected, Main Avenue could serve the needs of the Junior College and a part-time day school and the night school program.

Table IX shows the use that was made of the Main Avenue building for night classes for the session of 1927–1928. Classes are now held three nights in the week—Monday, Tuesday, and Thursday. Classes are conducted in four periods from 5:30 to 9:30. Only one room was used the first period. Eight rooms were used the second period, thirty-eight the third period, and thirty-seven the fourth. The peak load, carried the third period, amounted to 928 students.

Much might be said in favor of converting Main Avenue into a vocational school where classes in industrial and commercial education may be conducted. The location of this school near the business center makes it ideal for part-time industrial and commercial classes and all night-school work. With one of the buildings turned over to the Junior College and the other two remodeled to some extent, it would serve an admirable purpose in these respects. Temporary buildings could be eliminated, thus giving more room on the grounds.

Shops and special rooms for vocational courses in the night school are already established. Chemistry and biology laboratories for the Junior College are now located in this plant. In remodeling for vocational work, special stress should be placed on power machine operation for girls and women, household service for maids, beauty parlor work for training girls and women, and retail selling for both men and women. San Antonio, according to previous studies made by representatives of the Division of Extension, employs great numbers of girls and women as power machine operators, beauty parlor work, household service, and retail selling. All go on the job untrained. Nothing is done to train those already in industry or who will go into industry at an early age. Plans should be made for an expanding

program when the building is remodeled. The very excellent vocational program now being worked out in San Antonio could in this way be made one of the best in the southwest.

TABLE IX.—REPORT ON ROOMS USED IN EVENING SCHOOL IN MAIN AVENUE HIGH SCHOOL FOR 1927–1928

(Data from Office of Principal)

Room No.	Type of Room	Per. 1	Per. 2	Per. 3	Per. 4	Days
110	Classroom	....	....	20	24	M-T-Th
111	Classroom	....	....	32	34	M-T-Th
112	Classroom	....	....	17	17	M-Th
113	Classroom	....	....	25	22	M-T-Th
114	Classroom	....	....	25	25	M-Th
Cafe	Cafeteria	....	....	58	58	T
120	Laboratory	35	48	48	48	M-T-Th
123	Coaching Room	....	....	20	20	M-T-Th
124	Laboratory	....	....	30	25	M-T-Th
134	Laboratory	....	....	27	27	M-Th
135	Classsroom	....	30	19	18	M-T-Th
136	Classroom	....	....	30	30	M-T-Th
137	Laboratory	....	35	35	30	M-T-Th
140	Laboratory	....	8	8	8	M-T-Th
213	Classroom	....	....	16	16	M-T-Th
214	Classroom	....	25	18	....	M-T-Th
215	Classroom	....	....	12	12	M-T-Th
217	Classroom	....	23	23	23	M-T-Th
311	Machine Shop	....	....	22	22	M-T-Th
312	Classroom	....	....	15	15	M-T-Th
315	Drawing Room	....	....	17	17	M-T-Th
317	Electric Shop	....	....	20	20	M-T-Th
320	Classroom	....	....	30	45	M-T-Th
321	Classroom	....	....	32	32	M-T-Th
324	Classroom	....	....	34	30	M-T-Th
325	Classroom	....	8	15	22	M-T-Th
326	Laboratory	....	....	12	12	T-Th
327	Drawing Room	....	....	26	26	M-T-Th
328	Laboratory	....	....	16	16	M-T-Th
330	Laboratory	....	....	15	18	M-T-Th
334	Sewing Room	....	....	18	18	M-T-Th
336	Sewing Room	....	....	25	18	M-T-Th
337	Classroom	....	20	25	25	M-T-Th
338	Classroom	....	....	30	30	M-T-Th
339	Classroom	....	....	25	20	M-T-Th
340	Classroom	....	....	35	35	M-T-Th
342	Classroom	....	....	35	35	M-T-Th
	Auto Shop	....	....	20	20	M-T-Th

NOTE.—First Period, 5:30–6:30; Second Period, 6:30–7:30; Third Period, 7:30–8:30; Fourth Period, 8:30–9:30. All classes were over at 9:30.

III. EVALUATION OF THE SENIOR HIGH SCHOOL PLANTS

The survey staff used the Strayer-Engelhardt *Score Card for High-School Buildings.* This is a score card in general use in this country for evaluating high-school plants.

The scoring was done as liberally as the standards permit, and a copy of the scores of each plant is given below. In reading the scores, Tables X and XI, it will be seen that the first figures in columns 1, 2, and 3 are standard—the highest possible score. The second figures in columns 1, 2, and 3, respectively, are the scores as evaluated by the survey staff.

TABLE X.—BRACKENRIDGE HIGH-SCHOOL SCORES

	1		2		3	
I. Site					100	71
A. Location			30	25		
1. Accessibility	15	12				
2. Environment	15	13				
B. Nature and Condition			20	16		
1. Drainage and soil	12	10				
2. Upkeep of site	8	6				
C. Size and Form	50	30	50	30		
II. Building					155	126
A. Placement			10	8		
1. Orientation	5	4				
2. Position on site	5	4				
B. Gross Structure			75	59		
1. Type	5	3				
2. Material	15	12				
3. Height	2	1				
4. Roof	5	5				
5. Foundation	10	8				
6. Walls	10	8				
7. Entrances	3	2				
8. Utilization	10	8				
9. Aesthetic balance	5	4				
10. Condition	10	8				
C. Internal Structure			70	59		
1. Stairways	25	20				
2. Corridors	20	17				
3. Color scheme	5	3				
4. Basement	(15)	15				
5. Attic	5	4				
III. Service Systems					270	169
A. Heating and Ventilating			50	24		
1. Kind	10	8				
2. Installation	10	8				

TABLE X *(Continued)*

	1		2		3	
3. Air supply	5	2				
4. Fans and motors	5	0				
5. Distribution	10	5				
6. Temperature control	5	0				
7. Special provisions	5	1				
B. Fire Protection System			55	38		
1. Apparatus	3	1				
2. Fireproofness	35	25				
3. Fire exits	10	8				
4. Electric wiring	2	2				
5. Fire doors and partitions	3	1				
6. Exit lights and signs	2	1				
C. Cleaning System			15	7		
1. Kind	5	2				
2. Installation	3	1				
3. Efficiency	7	4				
D. Artificial Lighting System			25	18		
1. Gas and electricity	5	3				
2. Outlets and adjustment	8	7				
3. Methods and fixtures	7	5				
4. Maintenance	5	3				
E. Electric Service System			12	9		
1. Clocks	3	2				
2. Telephones	2	2				
3. Fire alarm system	4	3				
4. Call system	2	1				
5. Departmental electric service	1	1				
F. Water Supply System			30	21		
1. Drinking	5	4				
2. Washing	10	8				
3. Bathing	10	5				
4. Hot and cold water provisions	5	4				
G. Toilet System			40	30		
1. Distribution	10	9				
2. Fixtures	8	6				
3. Adequacy and arrangement	7	5				
4. Seclusion	5	3				
5. Sanitation	10	7				
H. Mechanical Service System	5	0	5	0		
I. Locker Service			20	14		
1. Home lockers	10	8				
2. Gymnasium lockers	10	6				
J. Laundry Service	3	0	3	0		
K. Storage Service			15	8		
1. Bicycles	1	1				
2. Automobiles	1	0				
3. Book storage	2	1				
4. Custodian's work Shop	2	1				
5. Janitor's storeroom	3	1				
6. Gymnasium storage	1	1				
7. School supply storage	2	1				
8. Receiving and shipping office	1	0				
9. Fuel storage	2	2				
IV. Classrooms or Recitation Rooms					145	102
A. Location and Connection	20	15	20	15		
B. Construction and Finish			65	42		

TABLE X *(Continued)*

	1		2		3	
1. Size	10	7				
2. Number and utilization	15	12				
3. Shape	10	6				
4. Floors	5	3				
5. Walls and ceilings	5	3				
6. Doors	3	2				
7. Closets and built-in bookcases	5	2				
8. Blackboards	5	3				
9. Bulletin boards	2	1				
10. Color scheme	5	3				
C. Illumination			40	32		
1. Glass area	22	18				
2. Windows	15	12				
3. Shades	3	2				
D. Equipment			20	13		
1. Seats and desks	10	7				
2. Teacher's desk	2	1				
3. Other equipment	8	5				
V. Special Classrooms					140	67
A. Science Laboratories			36	23		
1. General science laboratory	7	4				
2. Biology laboratory	7	4				
3. Botany laboratory	3	2				
4. Physics laboratory	7	6				
5. Chemistry laboratory	7	6				
6. Other laboratories	5	1				
B. Household Arts Laboratory			35	14		
1. Foods and cookery laboratory	5	3				
2. Housekeeping apartment	5	0				
3. Clothing laboratory	5	3				
4. Dressmaking laboratory	5	3				
5. Homecraft laboratory	5	1				
6. Millinery room	5	3				
7. Other laboratories	5	1				
C. Industrial Art Shops			36	10		
1. Woodworking shop	7	5				
2. Print shop	6	5				
3. Machine shop	6	0				
4. Auto repair shop	7	0				
5. Other shops	10	0				
D. Commercial Classrooms			15	9		
1. Bookkeeping rooms	5	4				
2. Stenography room	2	1				
3. Typewriting room	2	2				
4. Commercial laboratory	3	1				
5. Other commercial rooms	3	1				
E. Drawing and Art Classrooms			10	6		
1. Freehand drawing	3	2				
2. Mechanical drawing	3	2				
3. Arts and crafts	2	1				
4. Other art rooms	2	1				
F. Music Rooms			8	5		
1. Chorus room	6	4				
2. Practice rooms	2	1				

TABLE X *(Continued)*

	1		2		3	
VI. General Service Rooms					140	62
A. Auditorium			45	27		
1. Assembly room	25	20				
2. Stage	8	4				
3. Stage dressing rooms	3	1				
4. Property room	2	1				
5. Visualization equipment	2	1				
6. Other auxiliaries	5	0				
B. Cafeteria			20	15		
1. Lunch room	10	7				
2. Faculty lunch room	2	2				
3. Kitchen	5	4				
4. Dish-washing pantry	1	1				
5. Auxiliary rooms	2	1				
C. Gymnasium Facilities			30	3		
1. Gymnasium room	20	0				
2. Spectators' gallery	3	0				
3. Offices	1	1				
4. Examination room	1	0				
5. Other auxiliary rooms	1	0				
6. Dressing facilities	4	2				
D. Swimming Pool	10	0	10	0		
E. Library			20	5		
1. Library reading room	15	5				
2. Librarian's workroom	2	0				
3. Library classroom	2	0				
4. Library stackroom	1	0				
F. Study Halls	15	12	15	12		
VII. Administration Rooms					50	19
A. Administrative Offices			17	8		
1. Principal's private office	4	3				
2. Assistant principal's office	2	1				
3. General office workroom	5	2				
4. Reception and waiting room	1	0				
5. Supply room	1	0				
6. Vault	1	0				
7. Other administrative offices	3	2				
B. Teachers' Rooms			10	4		
1. Women's rest room	3	3				
2. Men's retiring room	2	0				
3. Teacher preparation rooms	5	1				
C. Health Service Rooms			15	4		
1. Waiting room	1	0				
2. Nurse's room	3	2				
3. Medical clinic	5	1				
4. Dressing rooms	1	0				
5. Dental clinic	3	0				
6. Other health service rooms	2	1				
D. Student Activity Rooms	2	1	2	1		
E. Custodial Service Rooms			6	2		
1. Custodian's office	2	1				
2. Engineer's room	2	1				
3. Male janitors	1	0				
4. Female help	1	0				
Totals	1,000	616	1,000	616	1,000	616

TABLE XI.—MAIN AVENUE HIGH-SCHOOL SCORES

	1		2		3	
I. Site					100	40
A. Location			30	13		
1. Accessibility	15	8				
2. Environment	15	5				
B. Nature and Condition			20	12		
1. Drainage and soil	12	7				
2. Upkeep of site	8	5				
C. Size and Form	50	15	50	15		
II. Building					155	87
A. Placement			10	5		
1. Orientation	5	2				
2. Position on site	5	3				
B. Gross Structure			75	45		
1. Type	5	3				
2. Material	15	8				
3. Height	2	1				
4. Roof	5	3				
5. Foundation	10	7				
6. Walls	10	7				
7. Entrances	3	2				
8. Utilization	10	5				
9. Aesthetic balance	5	2				
10. Condition	10	7				
C. Internal Structure			70	37		
1. Stairways	25	15				
2. Corridors	20	10				
3. Color scheme	5	2				
4. Basement	15	7				
5. Attic	5	3				
III. Service Systems					270	122
A. Heating and Ventilating			57	17		
1. Kind	10	5				
2. Installation	10	5				
3. Air supply	5	1				
4. Fans and motors	5	0				
5. Distribution	10	5				
6. Temperature control	5	1				
7. Special provisions	5	1				
B. Fire Protection System			55	23		
1. Apparatus	3	1				
2. Fireproofness	35	15				
3. Fire exits	10	5				
4. Electric wiring	2	1				
5. Fire doors and partitions	3	1				
6. Exit lights and signs	2	0				
C. Cleaning System			15	7		
1. Kind	5	2				
2. Installation	3	1				
3. Efficiency	7	4				
D. Artificial Lighting System			25	16		
1. Gas and electricity	5	3				
2. Outlets and adjustment	8	5				
3. Methods and fixtures	7	4				
4. Maintenance	5	4				

TABLE XI *(Continued)*

	1		2		3	
E. Electric Service System			12	8		
1. Clocks	3	2				
2. Telephones	2	2				
3. Fire alarm system	4	3				
4. Call system	2	1				
5. Departmental electric service	1	0				
F. Water Supply System			30	11		
1. Drinking	5	3				
2. Washing	10	4				
3. Bathing	10	2				
4. Hot and cold water provisions	5	2				
G. Toilet System			40	23		
1. Distribution	10	3				
2. Fixtures	8	6				
3. Adequacy and arrangement	7	3				
4. Seclusion	5	4				
5. Sanitation	10	7				
H. Mechanical Service System	5	0	5	0		
I. Locker Service			20	10		
1. Home lockers	10	5				
2. Gymnasium lockers	10	5				
J. Laundry Service	3	0	3	0		
K. Storage Service			15	7		
1. Bicycles	1	0				
2. Automobiles	1	0				
3. Book storage	2	1				
4. Custodian's workshop	2	1				
5. Janitor's storerooms	3	1				
6. Gymnasium storage	1	0				
7. School supply storage	2	1				
8. Receiving and shipping office	1	1				
9. Fuel storage	2	2				
IV. Classrooms or Recitation Rooms					145	78
A. Location and Connection	20	10	20	10		
B. Construction and Finish			65	34		
1. Size	10	5				
2. Number and utilization	15	10				
3. Shape	10	5				
4. Floors	5	2				
5. Walls and ceilings	5	2				
6. Doors	3	2				
7. Closets and built-in bookcases	5	2				
8. Blackboards	5	3				
9. Bulletin boards	2	1				
10. Color scheme	5	2				
C. Illumination			40	22		
1. Glass area	22	12				
2. Windows	15	8				
3. Shades	3	2				
D. Equipment			20	12		
1. Seats and desks	10	6				
2. Teacher's desk	2	1				
3. Other equipment	8	5				

TABLE XI *(Continued)*

	1		2		3	
V. Special Classrooms					140	59
A. Science Laboratories			36	16		
1. General science laboratory	7	3				
2. Biology laboratory	7	3				
3. Botany laboratory	3	2				
4. Physics laboratory	7	3				
5. Chemistry laboratory	7	3				
6. Other laboratories	5	2				
B. Household Arts Laboratory			35	9		
1. Foods and cookery laboratory	5	3				
2. Housekeeping apartment	5	0				
3. Clothing laboratory	5	1				
4. Dressmaking laboratory	5	1				
5. Homecraft laboratory	5	1				
6. Millinery room	5	2				
7. Other laboratories	5	1				
C. Industrial Arts Shops			36	18		
1. Woodworking shop	7	4				
2. Print shop	6	1				
3. Machine shop	6	5				
4. Auto repair shop	7	4				
5. Other shops	10	4				
D. Commercial Classrooms			15	7		
1. Bookkeeping room	5	3				
2. Stenography room	2	1				
3. Typewriting room	2	1				
4. Commercial laboratory	3	1				
5. Other commercial rooms	3	1				
E. Drawing and Art Classrooms			10	6		
1. Freehand drawing	3	2				
2. Mechanical drawing	3	3				
3. Arts and crafts	2	1				
4. Other art rooms	2	1				
F. Music Rooms			8	3		
1. Chorus room	6	2				
2. Practice rooms	2	1				
VI. General Service Rooms					140	45
A. Auditorium			45	21		
1. Assembly room	25	15				
2. Stage	8	4				
3. Stage dressing rooms	3	0				
4. Property room	2	0				
5. Visualization equipment	2	1				
6. Other auxiliaries	5	1				
B. Cafeteria			20	11		
1. Lunchroom	10	5				
2. Faculty lunchroom	2	1				
3. Kitchen	5	3				
4. Dish-washing pantry	1	1				
5. Auxiliary rooms	2	1				
C. Gymnasium Facilities			30	3		
1. Gymnasium room	20	0				
2. Spectators' gallery	3	0				
3. Offices	1	1				

TABLE XI *(Continued)*

	1		2		3	
4. Examination room	1	0				
5. Other auxiliary rooms	1	0				
6. Dressing facilities	4	2				
D. Swimming Pool	10	0	10	0		
E. Library			20	7		
1. Library reading room	15	5				
2. Librarian's workroom	2	1				
3. Library classroom	2	0				
4. Library stackroom	1	1				
F. Study Halls	15	3	15	3		
VII. Administration Rooms					50	14
A. Administrative Offices			17	7		
1. Principal's private office	4	3				
2. Assistant principal's office	2	1				
3. General office workroom	5	2				
4. Reception and waiting room	1	0				
5. Supply room	1	0				
6. Vault	1	0				
7. Other administrative offices	3	1				
B. Teachers' Rooms			10	2		
1. Women's rest room	3	1				
2. Men's retiring room	2	1				
3. Teacher preparation rooms	5	0				
C. Health Service Rooms			15	2		
1. Waiting room	1	0				
2. Nurse's room	3	1				
3. Medical clinic	5	1				
4. Dressing rooms	1	0				
5. Dental clinic	3	0				
6. Other health service rooms	2	0				
D. Student Activity Rooms	2	1	2	1		
E. Custodial Service Rooms			6	2		
1. Custodian's office	2	1				
2. Engineer's room	2	1				
3. Male janitors	1	0				
4. Female help	1	0				
Totals	1,000	445	1,000	445	1,000	445

Strayer and Engelhardt, in their *Standards for High-School Buildings,* show on page 2, Table I, scores allotted to high-school buildings in ten surveys by judges using the Strayer-Engelhardt Score Card. In order to show the relationship of the scores of Brackenridge and Main Avenue High Schools, to the scores in ten other surveys, this table is reproduced on page —.

TABLE XII.—SCORES ALLOTTED TO HIGH-SCHOOL BUILDINGS IN TEN SURVEYS BY JUDGES USING THE STRAYER-ENGELHARDT SCORE CARD

Scores	Atlanta Ga. 1922	Baltimore Md. 1921	Hackensack N. J. 1921	Harrisburg Pa. 1923	Omaha Neb. 1917	Paterson N. J. 1916	St. Joseph Mo. 1923	St. Paul Minn. 1917	Stamford Conn. 1922	White Plains N. Y. 1923
1– 100	--	--	--	--	--	--	--	--	--	--
101– 200	2	--	--	--	--	--	--	--	--	--
201– 300	1	--	--	1	1	--	--	--	--	--
301– 400	--	1	--	1	--	--	--	--	--	--
401– 500	--	--	--	--	--	--	1	--	--	--
501– 600	1	3	--	--	2	--	3	--	1	1
601– 700	--	--	--	--	1	--	--	--	--	--
701– 800	--	1	1	--	--	1	--	1	--	--
801– 900	--	--	--	--	--	--	--	3	--	--
901–1,000	--	--	--	--	--	--	--	--	--	--
Total	4	5	1	2	4	1	4	4	1	1

In reading this table, it should be borne in mind that any school building that scores less than 500 points can seldom be considered adequate for any continued period nor will it be found possible to reconstruct or repair such a building except at an excessive expenditure of funds.[1]

Applying the rating of the two San Antonio high-school plants to the scores of the above table, Brackenridge, with a score of 616, falls above the median of 501–600 of the 27 high-school buildings in the table. Main Avenue, with a score of 445 points, is in the rating with St. Joseph (Mo.) High School, with 7 high-school buildings lower, and 19 others higher.

Attention is called to the size and distribution of the cities represented in the above table. Since the scoring of these buildings (see dates), great progress has been made in these and other cities of the country in high-school construction. Further attention is called to the fact that not one of the above 27 high-school buildings scored 900 points. In 1926 one of the members of the survey staff helped in the scoring of all the high-school buildings, public and private, of 17 cities of one of the northern states and only 2 of these high-school buildings scored above 900 points.

It will be seen, therefore, from this comparison that Brackenridge High School is just an average building. It lacks in many essential provisions for the best grade of high-school instruction. A somewhat detailed description is given below.

It is apparent that the Main Avenue High School plant is so thoroughly lacking in all the essential requirements that the survey staff finds it necessary to recommend that it be abandoned as soon as practicable for high-school purposes and used in other ways. Detailed discussion of the scores of this high-school plant is also given below.

In order to set forth in detail the rating of the major items of the score card as applied to Brackenridge and Main

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[1]Strayer and Engelhardt, *Standards for High-School Buildings*, page. 1.

Avenue High School plants, each major item is given, with the *possible* score, followed by the *actual* score, with comment.

BRACKENRIDGE HIGH SCHOOL

I. *Site.* Possible, 100; actual, 71.

This site is fair except as to size. The standards state, "The site should be sufficiently commanding to give the high-school building a setting in keeping with the cost of the building and the importance of the structure.

"No site of less than 10 to 12 acres will suffice for girls' play field, boys' athletic field, tennis courts, basket ball courts, volley ball courts, experimental gardens, proper placement of buildings, and give desirable landscape setting. In large cities, larger areas should be secured so as to make possible an athletic field, separate buildings for gymnasiums, baths, dressing rooms, shops, and the like.[2]

II. *Building.* Possible, 155; actual, 126.

The building in its gross structure and in its internal structure is about 75 per cent in keeping with the proper standards. Fortunately, there is no basement.

III. *Service Systems.* Possible, 270; actual, 169.

In this important division, the actual score is only approximately 60 per cent of what it should be. There are no fans and motors, no provision for temperature control, inadequate fire protection apparatus, and no fire doors and partitions. The cleaning system is inefficient and the water supply service is insufficient for the large enrollment. Toilet facilities are excellent in distribution, but in other respects only fair. Storage service is poor.

IV. *Classrooms or Recitation Rooms.* Possible, 145; actual, 108.

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[2]Strayer-Engelhardt, *Standards for High-School Buildings.*

Location and connection of recitation rooms are good. Construction and finish in size, shape, floors, closets and built-in bookcases, and color scheme are only fair. Illumination and equipment are above average.

V. *Special Classrooms.* Possible, 140; actual, 67.

These rooms, such as laboratories for science and household arts, are generally poor. The industrial arts shops, other than those of wood-working and printing, are lacking. Commercial classrooms are not adequate and the same is true of drawing, art, and music rooms.

VI. *General Service Rooms.* Possible, 140; actual, 62.

The size and general arrangement of the auditorium are distinctly above the average, although provisions for the stage, dressing rooms, property room, visualization are below standard. The cafeteria is good in its general arrangement, but not adequate in size. Gymnasium facilities are almost wholly lacking, since the building has no gymnasium and no swimming pool. It is hardly possible to justify this lack with the argument that so much of the time during the school year can be spent in outdoor play. Further comment on this matter will be found in the discussion of the Main Avenue plant.

The library, one of the most important phases of high-school instruction, is the poorest feature of the entire plant. Conditions are deplorable so far as the standards are concerned, but it should be said, in justice to the administration, that through a system of classroom distribution, library needs are fairly well met. There is a room about the size of a classroom from which books are distributed. There is no library reading room worthy of the name, no librarian's work room, and no stack room. In another part of the building there is a special library used for other than school purposes and open to the public for a part of the day only.

It is strongly recommended that this room be used for library purposes for the Brackenridge High School.

VII. *Administration Rooms.* Possible, 50; actual, 19.

These rooms are low in the rating. There is a lack in every respect as shown on the score card above. The most serious deficiency is the lack of adequate facilities for the nurse's room and the entire absence of medical and dental clinics. San Antonio cannot afford to fail in this most important matter of health service. The regular administrative offices are about 50 per cent efficient, and the custodial service rooms are almost wholly lacking.

Main Avenue High School

I. *Site.* Possible, 100; actual, 40.

The location of the Main Avenue High School site, both as to accessibility and environment is not at all up to requirements. The standards state that a high-school building should be reasonably central to to its contributory schools and to the high-school population it serves, provided an adequate land area is available. Reference to the map on page —, above shows that the Main Avenue High School is poorly located geographically. Very undesirable environmental conditions prevail due to the nearness of non-fireproof buildings, the business section, street car line, dangers to the pupils of street crossings, with all the noise and dangers attendant. The nature and condition of drainage and soil, as well as upkeep of the site, are poor, with the exception of the lawn in front of the main building. Size and form score only 15 out of a possible 50 points. Attention is called to the quotation under the discussion of the Brackenridge High School site given above.

II. *Building.* Possible, 155; actual, 87.

Reference to the standards shows that little attention was given to orientation in the construction of the buildings. Because of the small size of the site there was little choice regarding the position of the three buildings. A *Type A* building, according to the American Institute of Architects, is one constructed entirely of fire-resistive materials, including its roof, windows, doors, floors, and finish. The buildings of Main Avenue are at best *Type C* structures. In internal structure, the stairways and corridors are far below standard.

III. *Service Systems.* Possible, 270; actual, 122.

Heating and ventilating are poorly provided for in kind, installation, and distribution. There are no fans and motors and no temperature control. Fire protection apparatus is not adequate, fireproofness rates low, and the fire escapes are not used in regular fire drills, therefore below standard.

The cleaning system in kind, installation, and efficiency is poor. The artificial lighting and the electric service are only fair. The water supply system is below standard for the large number of pupils to be served. The same is true of the toilet facilities. Locker and storage service are poor.

IV. *Classrooms or Recitation Rooms.* Possible, 145; actual, 78.

This is a most important division of the school plant. The three buildings have poor provisions for proper location and connection of classrooms. In general, the construction and finish are low in the rating. Illumination as to glass area and windows is inadequate. Equipment is poor.

V. *Special Classrooms.* Possible, 140; actual, 59.

This, another important part of a school plant, is even more lacking in efficiency of construction and equipment than that of general classrooms. Provisions for science laboratories are not all adequate,

and the facilities for household arts, industrial arts, commercial classrooms, drawing and art, and music rooms range from 25 to 50 per cent of proper standards.

VI. *General Service Rooms.* Possible, 140; actual, 45.

The auditorium, with a seating capacity of less than 1,000, is too small to serve the present enrollment, and this is true of a majority of the auditoriums in our large high schools. There is a lack of stage dressing rooms, property room, very little provision for visualization work, and of other auxiliaries. The cafeteria is badly crowded and poorly located.

As in the Brackenridge High School, gymnasium facilities are almost wholly lacking, and there is no swimming pool. Relative to the need of the gymnasium for this section of the country, the following quotation is submitted for consideration.

"It is to be hoped that more attention will be given by school men to open-air gymnasiums than thus far has been given. By an open-air gymnasium is meant a covered structure large enough and high enough for all gymnastic exercises, but inclosed on the sides with wire only, so as to allow the free movement of the outside air and complete exposure of the floor to sunshine some parts of the day. The most successful of such structures are usually made of a light but firmly united steel frame and trussed roof. In most of the southern states such gymnasiums can be used nearly every day of the winter and, of course, offer children a chance to exercise in the open air without exposure to inclement weather. But in sections where snows drift and the temperature is too low for free play out of doors they are not especially valuable."[3]

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[3]Dresslar, Fletcher B., *American School Buildings.* Bureau of Education Bulletin, 1924, No. 17, p. 74.

Library conditions are better than at Brackenridge. The librarian of the Main Avenue High School, in her report for 1927–1928 to the principal, made recommendations which the survey staff indorses. However, there is one alternative, that of the use of a portable building for library purposes, which is discussed later in the report of this survey. The librarian's recommendations follow:

"It is herewith recommended that in order to bring this library up to standard seating capacity established by the American Library Association for schools of 1,800 to 2,000 students, which is 10 per cent of the total student body, it is advisable to annex the study hall adjoining the library and equip it as a reading room. This equipment should consist of battleship lineoleum for the floor, eight tables and fifty chairs, lights and fan to correspond to the fixtures in the present library, one wall to be lined with shelves, similar to those in the main library. The magazine rack and the Atlas cabinet which are now in the main library may be moved to this reading room and the space that is now occupied by them may be converted into a reference section similar to the present one.

"The library now consists of one large room and a very small room. In the event that this study hall is added, it will be necessary to give the librarian an assistant. It is difficult even now for one person to keep strict discipline, to furnish the students with their reference material, to list bibliography for teachers, to order, check, accession, shelf list, and catalogue all new books, and to list for rebinding all old books. It would be with difficulty that one person could supervise three rooms. Moreover, there is no opportunity to have a class in elementary library science, which means that the librarian can teach library science to a limited number of girls,

only. This instruction must be given in connection with the general routine of the library.

"The added seating space and equipment will lend atmosphere to the library. With an assistant, the librarian will have an opportunity to complete the catalog, conduct a class in library science, and give increased aid to the students in their reference work."

VIII. *Administration Rooms.* Possible, 50; actual, 14.

Administrative offices for the principal and assistant are only fair. Better facilities for a general office workroom are needed and a waiting room and supply room are lacking. Better provisions for preserving the records in a fireproof vault of good dimensions and ample shelving are necessary.

Under "Other Administrative Offices" the *Standards* call for provisions for the Dean of Girls, Dean of Boys, night school principal, attendance officer, registrar, vocational counsellor, school psychologist, etc. Those are poorly provided for or entirely lacking.

Women's rest room and men's retiring room are not adequate and there is no teacher preparation room. The importance of this preparation room is seen in this quotation from the *Standards,* p. 78:

> To permit of the most complete utilization of all classroom space, teacher preparation rooms or workrooms are essential. The preparation rooms should be equipped with work desks and desk chairs, small lockers for teachers' books and material, bookcases for professional books, clock, and general utility table. The rooms should be located at a point which is readily accessible to large groups of teachers. The number, size, and character of these rooms will vary with the size of the school.

In another part of this report a study is shown of the large percentage of teachers who travel from one recitation room to another, making the need of the preparation room all the more apparent.

A most important phase of proper administration of the school is that of health service rooms. There is slight provision for the nurse's room, but there is no waiting room, no medical or dental clinics, and no other health service room.

Student activity rooms and custodial service rooms are not provided for in any suitable manner.

Table XIII gives the scores allotted on the major items of the score card for the two senior high-school plants and Figures 2 and 3 show graphically these items in relation to the possible score.

FIGURE 2.—Graphic Representation of the Five Major Items of the Scale Allotted to the Brackenridge High-School Plant. Total Possible Score Followed by Score for Brackenridge.

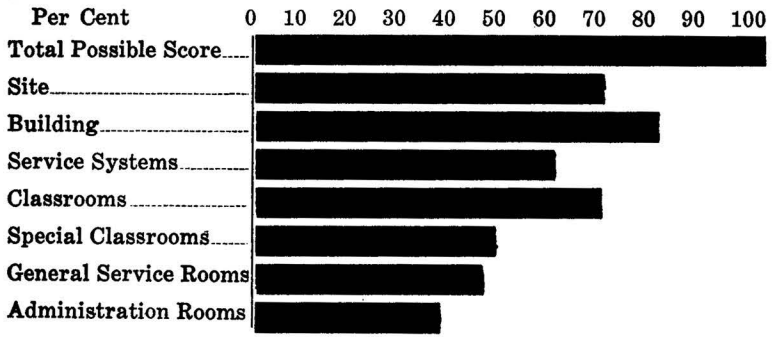

FIGURE 3.—Graphic Representation of the Five Major Items of the Scale Allotted to the Main Avenue High-School Plant. Total Possible Score Followed by the Score for Main Avenue.

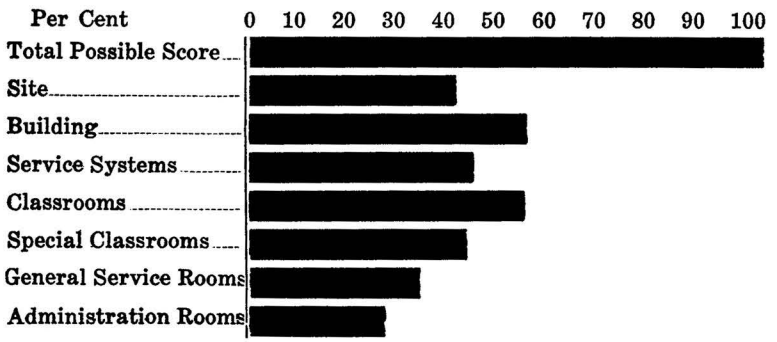

TABLE XIII.—SCORES ALLOTTED ON THE MAJOR ITEMS OF THE SCORE CARD FOR BRACKENRIDGE AND MAIN AVENUE HIGH-SCHOOL PLANTS

	Site	Building	Service Systems	Classrooms	Special Classrooms	General Service Rooms	Administration Rooms	Total
Possible Score	100	155	270	145	140	140	50	1,000
Brackenridge	71	126	169	102	67	62	19	616
Main Avenue	40	87	122	78	59	45	14	445

IV. SEATING AND LABORATORY ACCOMMODATIONS IN MAIN AVENUE HIGH SCHOOL

Table XIV sets forth the following significant data:

1. Normal seating capacity of each room.
2. Actual number of seats in each room.
3. Number of pupils accommodated by each room for each period of the school day.
4. Excess of pupils over normal capacity for each room every period of the day.

Thirty-two represents the total number of recitation rooms in the Main Avenue High School. All except one are seated in excess of the normal capacity of the rooms. The excess, as shown in Table XII, ranges from 3 to 15, and the average a little more than 7, with the average percentage in excess of 24. The actual number of pupils enrolled for the second semester of 1927–1928 and attending classes in the various rooms in excess of room capacity was as follows: First period, 21 rooms have a student excess of 118; second period, 25 rooms have an excess of 108; third period, 24 rooms have an access of 121; fourth period, 22 rooms have an excess of 131; fifth period, 24 rooms have an excess of 123, and sixth period, 19 rooms have an excess of 100. The total number of period-rooms in which excess occurs in the course of the day is 135 and the total pupil-recitation so inconvenienced is 701.

Conditions are somewhat better in non-recitation rooms as shown in Table XVI. The excess occurred in ten of the twenty-six rooms and the total excess, including the auditorium, was 251, the latter having an access of 180. The average excess in non-recitation rooms other than the auditorium was eight pupils.

TABLE XIV.—USE MADE OF RECITATION ROOMS DURING THE REGULAR SCHOOL DAY IN THE MAIN AVENUE HIGH SCHOOL FOR 1927-1928

Room	Seating Capacity		Number of Pupils Enrolled and Excess of Normal Room Capacity for Each Period of the Day											
			I		II		III		IV		V		VI	
No.	Normal	Actual	Pupils	Excess	Pupils	Excess	Pupils	Excess	Pupils	Excess	Pupils	Excess	Pupils	Excess
110	25	40	41	16	28	3	36	11	35	10	42	17	36	11
111	30	35	29	—1	31	1	28	—2	29	—1	32	2	26	—4
112	25	28	28	3	23	—2	27	2	33	8	29	4	27	2
113	30	35	28	—2	35	5	30	0	27	—3	27	—3	23	—7
114	26	26	22	—4	20	—6	29	3	24	—2	21	5	28	2
122	25	33	36	11	33	8	27	2	30	5	33	8	31	6
135	25	35	20	—5	29	4	26	1	12	—13	21	—4	27	2
136	25	30	23	—2	22	—3	32	7	29	4	23	—2	31	6
137	25	35	21	—4	34	9	23	—2	31	6	33	8	17	—8
210	25	34	26	1	29	4	32	7	36	11	33	8	25	0
211	25	32	27	2	23	—2	21	—4	22	—3	23	—2	31	6
212	25	35	32	7	28	3	26	1	22	—3	28	3	21	—4
213	25	35	30	5	27	2	29	4	35	10	32	7	21	—4
214	25	35	28	3	23	—2	19	—6	33	8	28	3	27	2
215	25	35	33	8	29	4	31	6	28	3	30	5	31	6
216	25	35	29	4	29	4	36	11	34	9	27	2	29	4
217	25	30	28	3	24	—1	27	2	27	2	27	2	29	4
220	25	30	22	—3	30	5	22	—3	30	5	28	3	30	5
221	25	32	28	3	33	8	30	5	18	—7	25	0	25	0
224	25	30	21	—4	30	5	27	2	29	4	30	5	24	—1
224A	25	30	23	—2	28	3	27	2	30	5	24	—1	26	1
226	25	35	27	2	30	5	31	6	31	6	31	6	30	5
229	25	34	30	5	26	1	34	9	31	6	14	—11	20	—5
312	25	29	23	—2	28	3	30	5	32	7	27	2	24	—1
324	25	30	24	—1	30	5	32	7	21	—4	31	6	31	6
325	25	28	34	9	31	6	30	5	28	3	28	3	28	3
337	25	35	35	10	28	3	31	6	22	—3	28	3	19	—6
338	25	36	30	5	29	4	25	0	30	5	31	6	30	5
339	25	32	31	6	29	4	32	7	32	7	28	3	19	—6
340	25	32	32	7	31	6	29	4	26	1	32	7	31	6
342	25	28	28	3	21	—4	24	—1	25	0	25	0	23	—2
343	20	24	28	8	23	3	28	8	26	6	25	5	28	8
TOTAL EXCESS				118		108		121		131		123		100
No. rooms in which excess occurred				21		25		24		22		24		19

TABLE XV: EXCESS SEATING OVER NORMAL ROOM CAPACITY IN THE MAIN AVENUE HIGH SCHOOL FOR 1927–1928

(As Reported by the Principal)

Room No.	Normal Capacity	Actual Number of Seats	Excess
Recitation Rooms:			
110	25	40	15
111	30	35	5
112	25	28	3
113	30	35	5
122	25	33	8
135	25	35	10
136	25	30	5
137	25	35	10
210	25	34	9
211	25	32	7
212	25	35	10
213	25	35	10
214	25	35	10
215	25	35	10
216	25	35	10
217	25	30	5
220	25	30	5
221	25	32	7
224	25	30	5
224A	25	30	5
226	25	30	5
229	25	34	9
312	25	29	4
324	25	30	5
325	25	28	3
337	25	35	10
338	25	36	11
339	25	32	7
340	25	32	7
342	25	28	3
343	20	24	4
Non-Recitation Rooms:			
120	25	48	23
123	25	30	5
124	25	32	7
134	25	36	11
321	25	30	5
323	20	21	1
326	24	30	6
329	24	32	8
334	20	22	2
Auditorium:	803	983	180

TABLE XVI.—USE MADE OF ALL ROOMS OTHER THAN RECITATION ROOMS DURING THE REGULAR SCHOOL DAY IN THE MAIN AVENUE HIGH SCHOOL FOR 1927–1928

Room	No.	Seating Capacity Normal	Seating Capacity Actual	Number of Pupils Enrolled and Excess of Normal Room Capacity for Each Period of the Day — I Pupils	I Excess	II Pupils	II Excess	III Pupils	III Excess	IV Pupils	IV Excess	V Pupils	V Excess	VI Pupils	VI Excess	Average Excess
Laboratory	120	25	48	47	22	39	14	41	16	46	21	37	12	29	4	14.8
Coaching Room	123	25	30	30	5	30	5	30	5	30	5	30	5	30	5	5.0
Laboratory	124	25	32	25	—2	28	3	32	7	32	7	22	—3	24	—1	1.8
Piano Music Room	130	—	—	23	—	31	—	14	—	15	—	25	—	38	—	—
Laboratory	134	25	36	26	1	27	2	56	31	39	14	44	19	35	10	12.8
Physical Ed. Room	140	55	55	30	—25	32	—23	29	—21	—	—	52	—3	64	9	—10.6
Office	141	8	8	8	0	8	0	8	0	8	0	8	0	8	0	0.0
Study Hall	222	70	65	62	—8	84	14	75	5	73	3	78	8	70	0	6.3
Mill Room	310	—	14	14	—	14	—	14	—	19	—	19	—	19	—	—
Machine Shop	311	—	21	20	—	20	—	20	—	22	—	22	—	22	—	—
Man'l Train. Room	314	—	14	10	—	12	—	15	—	19	—	15	—	13	—	—
Drawing Room	315	22	22	19	—3	19	—3	19	—3	21	—1	24	2	24	2	—1.0
Electric Shop	317	16	14	13	—3	13	—3	13	—3	16	0	16	0	16	0	—1.5
Study Hall	320	72	65	70	—2	70	—2	75	3	78	6	74	2	78	6	2.2
Shop	321	25	30	32	7	32	7	20	—5	28	3	28	3	28	3	3.0
Drawing Room	323	20	21	15	—5	17	—3	14	—6	21	1	21	1	20	0	—2.0
Laboratory	326	24	30	32	8	28	4	30	6	26	2	22	—2	30	6	4.0
Drawing Room	327	27	24	24	—3	25	—2	25	—2	22	—5	21	—6	20	—7	—4.1
Laboratory	329	24	32	31	7	32	8	23	1	29	5	31	7	22	—2	4.3
Cooking Room	330	22	22	20	—2	21	—1	19	—3	18	—4	18	—4	22	0	2.3
Cooking Room	331	20	20	20	0	14	—6	20	0	—	—	18	—2	20	0	—1.6
Sewing Room	334	20	22	20	0	18	—2	16	—4	12	—8	23	3	23	3	—1.6
Sewing Room	336	25	18	18	—7	18	—7	18	—7	—	—	—	—	—	—	—7.0
Art Room	341	25	24	24	—1	27	2	16	—9	—	—	20	—5	20	—5	—3.6
Shop	—	—	16	15	—	15	—	15	—	15	—	15	—	15	—	—
Cafe	—	—	—	51	—	51	—	46	—	53	—	—	—	—	—	—
Auditorium	—	—	983	180	—	140	—	230	—	265	—	278	—	225	—	—

Special attention is called to the fact that every recitation room is used every period of the day, and most, if not all of the non-recitation rooms are used for regular class work in addition to the use which they are supposed to serve. For example, room 120, a laboratory room, equipped with tables and chairs to accommodate 25 pupils, carries an average excess of 14.8 pupils for the day, some of which periods are regular recitations in other than science, for which extra chairs are placed and for which the room is wholly unsuited. The physical education room, No. 140, intended for a certain type of physical education, must be seated with chairs and used for recitation purposes. Even a small office accommodating only 8 pupils is brought into use for class work for small classes. These rooms, which are intended for special purposes, should not be used for class work. They are not at all adapted to this purpose.

Attention should also be called to the fact that negative quantities, in the excess column, may not be at all significant. In any well directed high school where an enriched curriculum is offered, small classes, especially in advanced courses, are inevitable and simply must be provided for. This is particularly true of Latin, mathematics, and advanced courses in most subjects. The significant facts are the positive excesses, which exist in practically all recitation rooms for one or more periods of the day and for most of the non-recitation rooms. The fact that rooms are used for purposes for which they were never intended means that often lighting and ventilation are poor and that pupils are uncomfortably accommodated. Such conditions should not be tolerated in a progressive community.

It is evident, from the above data, that Main Avenue is at present carrying a student load far in excess of its capacity. A 25 per cent excess load in recitation rooms is a very important matter and should receive immediate attention. This condition will become more serious as the potential high-school enrollment becomes actual and as the population of the city grows. That both these results are inevitable is shown by a study of enrollments in every high-school district in America and a casual observation of the growth of San Antonio.

V. ROOM ASSIGNMENTS TO TEACHERS IN MAIN AVENUE HIGH SCHOOL FOR 1927–1928

Table XVII sets forth conditions as to the home room teacher versus the traveling teacher in Main Avenue High School. Thirty-one teachers taught in only one room, five in two rooms, ten taught in three rooms, four in four rooms and one in five rooms. It is seen that 30 per cent of the teachers are conducting their work in three or more rooms. This is a deplorable condition and should not be tolerated. All authorities agree that in most subjects in the modern high school special equipment and reference material are necessary for best results. There is therefore a strong tendency to set aside a room or suite of rooms adjacent to each other for teaching classes in a given subject. Material for teaching is all kept in the room or rooms in appropriate cabinets and is therefore always available for the teacher. This plan is sometimes referred to as the unit plan of organization. The subject of history will illustrate this point. Good history teaching demands maps, globes, charts, etc. These should be of the best types and should be kept in cases or cabinets when not in use. It is a sad commentary, either on the administrative organizations or on the adequacy of room accommodations, when teachers are forced to chase from one portion of the building to another with maps and globes or other material in hand and then must chase back to the room from which it was taken before the next period begins.

The lack of unit organization and provision for home rooms was one of the striking shortcomings observed by the survey staff. An inquiry into the cause of such condition did not place the blame at the door of the administrative officers. It soon became evident that commendable results in this direction had been made by those in charge when the limitations under which they labored were considered.

TABLE XVII. ROOM ASSIGNMENT TO TEACHERS AT MAIN AVENUE HIGH SCHOOL FOR 1927–1928

ALL TEACHING DONE IN ONE ROOM

Subject.	No. of Teachers
Social Science	6
English	10
English-Speaking	1
Public Speaking	1
Spanish	3
French	1
Latin	1
Academic Coach	1

TEACHING DONE IN TWO ROOMS

Subject	No. of Teachers
Social Science	2
Public Speaking	1
Commercial Courses	1
English	1

TEACHING DONE IN THREE ROOMS

Subject	No. of Teachers
English	2
Mathematics	1
Commercial Courses	4
Spanish	1
Social Science	2

TEACHING DONE IN FOUR ROOMS

Subject	No. of Teachers
Mathematics	2
English	1
Latin	1

TEACHING DONE IN FIVE ROOMS

Subject	No. of Teachers
Spanish	1

TEACHING DONE IN THREE, FOUR OR FIVE ROOMS

Subject	No. of Teachers
English	3
Mathematics	3
Commercial Courses	4
Spanish	2
Social Sciences	2
Latin	1

The underlying causes are in the building plan or lack of it, the fact that the plant represents an accretion of one building after another, with no well defined plan to house the school program, and the further fact that the building is overloaded as is shown above. The simple fact is that a large room, which cares for a large section in history the first period of the day must be used for a large section in Spanish the second period, while the smaller section in history of the second period moves to a smaller room in a remote corner of the building or in another building, for the children of every section must be seated.

Attention should here be called to the fact that, in the main, classrooms in Main Avenue are too small, or rather that there are too few large classrooms with a capacity or 35 or 40 pupils. In the unit organization, the rooms grouped for a given subject should have, generally one or two large rooms, some medium-sized rooms and some smaller rooms. This matter will doubtless be given attention when the new building program is undertaken.

SUMMARY AND RECOMMENDATIONS

1. San Antonio has shared with other American cities a rapid growth in scholastic population for the last ten years, which has been accelerated during the last two years.

2. The city has less financial burden to support its school program from the standpoint of school enrollment than other comparable cities, especially in the high schools, on account of its large Mexican population, but must, on the other hand, develop a type of education in the high schools of an expensive sort in order to attract and hold the children of foreign descent.

3. San Antonio's growth in high-school enrollment has not kept pace with growth in high-school enrollment throughout the country.

4. San Antonio is not serving effectively its students of high-school age.

   a. Approximately half the pupils of high-school age are not enrolled in any high school, public or private.

   b. The Main Avenue High School plant is inadequate both as to quality of service and number of pupils accommodated on the present enrollment basis, to say nothing of the children of high-school age not enrolled. The same is true to a less degree of Brackenridge High School.

   c. The location and general environment of Main Avenue High School are so unsatisfactory as to demand that it be abandoned as a regular day high school.

   d. The score given Main Avenue, by the use of the Strayer-Engelhardt score card, is 445 on the basis of 1,000 as a total possible score. A building that scores no higher should be abandoned for regular high-school purposes.

e. The population trends of the city demand that at least one, and possibly two, new high schools should be established.

5. Both high schools are so overcrowded that unit arrangement of rooms for given subjects and provisions for home rooms for teachers are impossible. Conditions are especially bad with respect to this matter in Main Avenue High School. In this school, not only are home rooms impossible, necessitating moving equipment that should remain stationary, from room to room, but laboratories, shops, offices, and various cubbyholes are employed for recitation purposes. All recitation rooms in this school are overseated, the average excess of seating over capacity being about 25 per cent.

The following recommendations are submitted:

1. The Main Avenue High School plant should be abandoned as a regular day high school.

2. Consideration should be given to the continued use of the plant, after remodeling, as a part-time day and evening school, night school, and junior college.

3. A new high-school building, with a capacity of at least 3,000 pupils and modern in every respect should be erected to the north and west of the present Main Avenue building, or

4. A high-school building of less size should be erected north and west of the present Main Avenue building and a second high-school building, adapted for trade and vocational work, as well as for regular academic work, erected in the western section of the city.

5. A research department should be established in the San Antonio schools, whose function it would be, in coöperation with outside agencies, to conduct further studies in the curriculum, teaching efficiency, a testing program, pupil accounting, vocational training, etc. Whether such a department is established or not, it is strongly recommended that these further studies be undertaken.